

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of identifying subsurface damage to a composite material aircraft caused by a mechanical impact, comprising the steps of:

providing a plurality of panels made from a low ductility composite material, with each panel having a surface wherein the low ductility of the material is characterized by a tensile elongation to failure of less than about 2 percent;

preparing an indicator paint having an impact-sensitive component that produces a visible change when subjected to a mechanical impact, wherein the indicator paint comprises a mixture of a first reactant and a second reactant separated by a barrier that is rupturable so that the first reactant and the second reactant mix and produce the visible change when the indicator paint is subjected to the impact;

covering the surface of each panel with the indicator paint wherein each panel is mounted on a support structure to substantially maintain a form for the panel;

visually inspecting each supported panel periodically to locate the visible change indicative of a panel deformation caused by the mechanical impact; and  
in response to locating the visible change on a respective panel,  
evaluating the respective panel to identify any subsurface damage.

2. (Cancelled)
3. (Previously Presented) The method of claim 1 wherein the evaluating step is accomplished by performing an X-ray inspection of the respective panel.
4. (Previously Presented) The method of claim 1 wherein the evaluating step is accomplished by performing an acoustic inspection of the respective panel.
5. (Previously Presented) The method of claim 1 wherein the panels are assembled to form the aircraft after the covering step.

Claims 6-8 (Canceled)

9. (Previously Presented) The method of claim 1 wherein the indicator paint does not emit light when subjected to the mechanical impact.

10. (Previously Presented) The method of claim 1 wherein the step of inspecting is performed without light-detection instrumentation.

11. (Previously Presented) The method of claim 1 wherein the step of inspecting is performed by an unaided eye.

12. (Previously Presented) The method of claim 1 further comprising the step of determining a design limit for the composite material responsive to an observability of impact indications.

13. (Previously Presented) The method of claim 1 further comprising the step of determining a first design limit for the composite material with indicator paint applied thereto, and a second design limit for the composite material with no indicator paint applied thereto.

14. (Currently Amended) A method of identifying subsurface damage to a composite material aircraft caused by a mechanical impact, comprising the steps of:

providing a plurality of panels made from a low ductility composite material, with each panel having a surface, wherein the low ductility of the composite material ~~[[has]]~~ is characterized by a tensile elongation to failure of less than about 2 percent;

preparing an indicator paint having an impact-sensitive component that changes color when subjected to a mechanical impact, wherein the indicator paint comprises a mixture of

a first reactant, and

a second reactant,

wherein the first reactant and the second reactant are separated by a barrier that is ruptured when the indicator paint is subjected to the mechanical impact;

covering the surface of each panel with the indicator paint wherein each panel is mounted on a support structure to substantially maintain a form for the panel;

visually inspecting each supported panel periodically to locate a color change indicative of a panel deformation caused by the mechanical impact; and

in response to locating the color change on a respective panel, evaluating the respective panel to identify any subsurface damage.

15. (Previously Presented) The method of claim 14 wherein the indicator paint does not emit light when subjected to the mechanical impact.

16. (Previously Presented) The method of claim 14 wherein the step of inspecting is performed without light-detection instrumentation.

17. (Previously Presented) The method of claim 14, wherein the step of inspecting is performed by an unaided eye.

18. (Previously Presented) The method of claim 14 further comprising the step of determining a design limit for the composite material responsive to an observability of impact indications.

19. (Previously Presented) The method of claim 14 further comprising the step of determining a first design limit for the composite material with the indicator paint applied thereto, and a second design limit for the composite material with no indicator paint applied thereto.

Claims 20-24 (Canceled)

25. (Previously Presented) The method of claim 14 wherein the composite material is a polymer-matrix composite material.